CLAIM OR CLAIMS

I/WE CLAIM:

1. A transgenic plant comprising in its genome a transgene encoding a member FLC gene family, the transgenic plant having altered timing of its flowering compared to non-transgenic plants of the same species.

2. A transgenic plant as claimed in claim 1 wherein the transgenic plant flowers earlier than non-transgenic plants of the same species.

3. A transgenic plant as claimed in claim 1 wherein the transgenic plant flowers later than non-transgenic plants of the same species.

4. A transgenic plant as claimed in claim 1 wherein the member of the FLC gene family is selected from the group consisting of FLC1, FLC2 and FLC3 from *Arabidopsis thaliana* and BrFLC1A and BrFLC1B from *Brassica rapa*.

5. Seed of the transgenic plant of claim 1.

6. A seed for a transgenic plant, the seed comprising in its genome a transgene comprising a plant expressible promoter and a protein coding region for a plant FLC protein, the plant FLC protein (i) having a MADS box domain, (ii) being at least 40% identical in amino acid sequence to the FLC1 or the FLC2 protein from Arabidopsis, SEQ ID NO:2 or SEQ ID NO:4, outside of the region of the MADS box domain, and (iii) effective when expressed in transgenic plants to cause a delay in the onset of flowering in the transgenic plant as compared to a non-transgenic plant of the same genetic background.

7. A plant grown from the seed of claim 6.

8. A seed as claimed in claim 6 wherein the FLC protein is at least 50% identical to the amino acid sequence of the FLC1 gene outside of the MADS box domain.

9. A seed for a transgenic plant comprising in its genome a transgene comprising a plant expressible promoter and a protein coding region for a member of the FLC family of proteins, the member of the FLC family of proteins being phylogenically more related to the FLC1 or the FLC2 protein from *Arabidopsis thaliana* than to any other MADS box domain protein from *Arabidopsis thaliana*.

10. A transgenic plant cultivated from the seed of claim 9.

11. A seed for a transgenic plant, the seed comprising in its genome a transgene comprising a plant expressible promoter operable connected to a sequence encoding the complement to a sufficient portion of a protein coding region for a plant FLC protein to lower the level of endogenous FLC protein activity in a plant grown from the seed, the plant FLC protein (i) having a MADS box domain, (ii) being at least 40% identical in amino acid sequence to the FLC1 or the FLC2 protein from Arabidopsis, SEQ ID NO:2 and SEQ ID NO:4, outside of the region of the MADS box domain, and (iii) effective when expressed in transgenic plants to cause a delay in the onset of flowering in the transgenic plant as compared to a non-transgenic plant of the same genetic background.

12. An isolated nucleotide sequence comprising the coding sequence for the FLC1 gene from Arabidopsis, SEQ ID NO:1.

13. An isolated DNA sequence comprising a DNA sequence encoding the FLC1 protein from Arabidopsis, SEQ ID NO:2.

14. A genetic construction comprising a plant expressible promoter operably connected to a protein coding sequence for a protein of the FLC gene family, the plant FLC protein (i) having a MADS box domain, (ii) being at least 40% identical in amino acid sequence to the FLC1 (SEQ ID NO:2) or the FLC2 (SEQ ID NO:4) protein from Arabidopsis, and (iii) effective when expressed in transgenic plants to cause a delay in the onset of flowering in the transgenic plant as compared to a non-transgenic plant of the same genetic background.

15. A plant comprising in its genome the genetic construction of claim 14.

16. A genetic construction as claimed in claim 14 wherein the FLC protein is selected from the group consisting of FLC1, FLC2 and FLC3 from *Arabidopsis thaliana* and BrFLC1A and BrFLC1B from *Brassica rapa.*

17. A genetic construction as claimed in claim 14 wherein the plant FLC gene is at least 50% identical in amino acid sequence to the FLC1 protein from Arabidopsis, SEQ ID NO:1.

18. A genetic construction comprising a plant expressible promoter operably connected to sequence sufficiently complementary to a protein coding sequence for a protein of the FLC gene family so as to lower the activity of the FLC protein in a transgenic plant, the plant FLC protein (i) having a MADS box domain, (ii) being at least 40% identical in amino acid sequence to the FLC1 protein from Arabidopsis, SEQ ID NO:1, and (iii) effective when expressed in transgenic plants to cause a delay in the onset of flowering in the transgenic plant as compared to a non-transgenic plant of the same genetic background.

19. A transgenic plant comprising a transgene for a member of the FLC gene family wherein flower initiation in the genetically modified plant occurs at least about 7 days before or after flower initiation in a non-transgenic plant of the same genetic background without the transgene while being grown under the same conditions.

20. A method of producing a transgenic plant with altered flowering characteristics comprising:

contacting a plant cell with a transgene comprising plant expressible promoter and a plant FLC gene;

identifying a plant cell carrying the inserted transgene;

regenerating a transgenic plant from the plant cell, wherein the transgenic plant exhibits at least about 10% fewer or more leaves than a non-transgenic plant of the same genetic background without the transgene, wherein the number of leaves is determined when the transgenic plant and the non-transgenic plant are being grown under the same conditions.